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LICENCE I

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THE INTERNET, HOW IT WORKS?

Even though the Internet is still a young technology, it's hard to imagine life without it now. Every year, engineers create more devices to integrate with the Internet. This network of networks crisscrosses the globe and even extends into space. But what makes it work?

To understand the Internet, it helps to look at it as a system with two main components. The first of those components is hardware. That includes everything from the cables that carry terabits of information every second to the computer sitting in front of you. Other types of hardware that support the Internet include routers, servers, cell phone towers, satellites, radios, smartphones and other devices. All these devices together create the network of networks. The Internet is a malleable system, it changes in little ways as elements join and leave networks around the world. Some of those elements may stay fairly static and make up the backbone of the Internet. Others are more peripheral. These elements are connections. Some are end points, the computer, smartphone or other device you're using to read this may count as one. We call those end points clients. Machines that store the information we seek on the Internet are servers. Other elements are nodes which serve as a connecting point along a route of traffic. And then there are the transmission lines which can be physical, as in the case of cables and fiber optics, or they can be wireless signals from satellites, cell phone or 4G towers, or radios.

All of this hardware wouldn't create a network without the second component of the Internet: the protocols. Protocols are sets of rules that machines follow to complete tasks. Without a common set of protocols that all machines connected to the Internet must follow, communication between devices couldn't happen. The various machines would be unable to understand one another or even send information in a meaningful way. The protocols provide both the method and a common language for machines to use to transmit data. You've probably heard of several protocols on the Internet. For example, hypertext transfer protocol is what we use to view Web sites through a browser, that's what the http at the front of any Web address stands for. If you've ever used an FTP server, you relied on the file transfer protocol. Protocols like these and dozens more create the framework within which all devices must operate to be part of the Internet. Two of the most important protocols are the transmission control protocol (TCP) and the Internet protocol (IP). We often group the two together -- in most discussions about Internet protocols you'll see them listed as TCP/IP.

By Jonathan Strickland, www.***Howstuffworks***.com

THE SMARTPHONE

A smartphone is a mobile phone (also known as cell phones) with an advanced mobile operating system that combines features of a personal computer operating system with other features useful for mobile or handheld use. Smartphones, which are usually pocket-sized, typically combine the features of a mobile phone, such as the abilities to place and receive voice calls and create and receive text messages, with those of other popular digital mobile devices like personal digital assistants (PDAs), such as an event calendar, media player, video games, GPS navigation, digital camera and digital video camera. Smartphones can access the Internet and can run a variety of third-party software components ("apps"). They typically have a color display with a graphical user interface that covers more than 70% of the front surface. The display is almost always a touchscreen, which enables the user to use a virtual keyboard to type words and numbers and press onscreen icons to activate "app" features.

Android is a mobile operating system developed by Google, and backed by an industry consortium known as the Open Handset Alliance. It is an open source platform with optional proprietary components, including a suite of flagship software for Google services, and the application and content storefront Google Play. Android was officially introduced via the release of its inaugural device, the HTC Dream (T-Mobile G1) on 20 October 2008. As an open source product, Android has also been the subject of third-party development. Development groups have used the Android source code to develop and distribute their own modified versions of the operating system, such as CyanogenMod, to add features to the OS and provide newer versions of Android to devices that no longer receive official updates from their vendor. Forked versions of Android have also been adopted by other vendors, such as Amazon.com, who used its "Fire OS" on a range of tablets and the Fire Phone. As it is a non-proprietary platform that has shipped on devices covering a wide range of market segments, Android has seen significant adoption. Gartner Research estimated that 325 million Android smartphones were sold during the fourth quarter of 2015, leading all other platforms. Samsung Electronics, who produces Android devices, was also the top smartphone vendor across all platforms in the same period of time. Android is the top-selling smartphone OS in 2016.

Adapted from Wikipidea

What is Touchscreen Technology?

According to PC Magazine a touchscreen is, “a display screen that is sensitive to the touch of a finger or stylus”. Widely used on **ATM*** machines, retail point-of-sale terminals, car navigation systems, medical monitors and industrial control panels, the touch screen became wildly popular on handhelds after Apple introduced the iPhone in 2007.

The touchscreen is one of the easiest to use and most intuitive of all computer interfaces, a touchscreen allows users to navigate a computer system by touching icons or links on the screen.

There are three components used in touchscreen technology. First we have the touch sensor. It is a panel with a touch responsive surface. Systems are built based on different types of sensors: resistive (most common), surface acoustic wave, and capacitive (most smart phones). However, in general, sensors have an electrical current running through them and touching the screen causes a voltage change. The voltage change signals the location of the touching. Then, we have the controller which is the hardware that converts the voltage changes on the sensor into signals the computer or other device can receive. Last, but not least, is the software. It tells the computer, smartphone, game device, etc, what is happening on the sensor and the information coming from the controller, who is touching what and where and allows the computer or smart phone to react accordingly.

Of course, the technology works in combination with a computer, smart phone, or any other type of device with a screen.

By Mary Bellis, *www.thoughtco.com*

***ATM:** Automated Teller Machine (Cash machine)